CLAIMS

1. In a wireless communications device, a method for controlling transmitter output levels, the method comprising:

determining an error in a transmit bias control value; and,

using the error to compensate a subsequent initial transmit bias control value

2. The method of claim 1 further comprising:

selecting a transmitter output level;

in response to selecting a transmitter output level, supplying a corresponding initial transmit bias control value; and,

in response to supplying an initial transmit bias control value, generating an initial transmitter output level.

3. The method of claim 2 further comprising:

measuring the transmitter output level; and,

in response to measuring the transmitter output level, adjusting the transmit bias control value until the transmitter output level equals the selected transmitter output level.

4. The method of claim 3 further comprising:

maintaining a table of initial transmit bias control values cross-referenced to transmitter output levels;

wherein supplying an initial transmit bias control value includes supplying an initial transmit bias control value from the table corresponding to a selected transmitter output level; and,

wherein using the error to compensate a subsequent initial transmit bias control value includes adding the error to an initial transmit bias control value from the table.

5. The method of claim 4 wherein maintaining a table of initial transmit bias control values cross-referenced to selected transmitter output levels includes cross-referencing the initial transmit bias control values to temperature;

the method further comprising:

measuring temperature; and,

wherein supplying a corresponding initial transmit bias control value includes supplying an initial transmit bias control value from the table in response to the temperature.

6. The method of claim 4 wherein selecting a transmitter output level includes selecting a transmitter output frequency;

wherein maintaining a table of initial transmit bias control values cross-referenced to selected transmitter output levels includes cross-referencing the initial transmit bias control values to transmitter output frequencies; and,

wherein supplying a corresponding initial transmit bias control value includes supplying an initial transmit bias control value from the table in response to the transmitter output frequency.

7. The method of claim 4 in which the wireless communications device operates in an analog mode; and,

wherein selecting a transmitter output level includes selecting transmitter output levels in accordance with advanced mobile phone service (AMPS) specifications.

8. The method of claim 7 wherein adjusting the transmit bias control value until the transmitter output level equals the selected transmitter output level includes achieving the selected transmitter output level within 20 milliseconds.

9. The method of claim 4 wherein measuring the transmitter output level includes converting the transmitter output voltage to a binary number.

10. The method of claim 9 wherein maintaining a table of transmit bias control values cross-referenced to selected transmitter output levels includes storing the transmit bias control values as binary numbers.

11. The method of claim 10 wherein using the error to compensate a subsequent initial transmit bias control value includes summing the error with the corresponding initial transmit bias control value to create a compensated transmit bias control value; and,

wherein adjusting the transmit bias control value until the transmitter output level equals the selected transmitter output level includes adjusting the compensated transmit bias control value in

response to the measured transmitter output level, and to a reference value to create an adjusted transmit bias control value;

12. The method of claim 11 further comprising:

converting the adjusted transmit bias control value to a control voltage; and,

using the control voltage to bias the transmitter.

13. The method of claim 12 wherein determining an error in a transmit bias control value includes:

comparing an initial transmit bias control value and a corresponding adjusted transmit bias control value;

using the difference between the initial transmit bias control value and the corresponding adjusted transmit bias control value to create an error value;

saving the error value; and,

wherein using the error to compensate a subsequent initial transmit bias control value includes adding the error value to a subsequent initial transmit bias control value.

14. In a wireless communications device, a method for compensating an initial transmit bias control value, the method comprising:

operating at a first transmitter output level;

determining a first error value in a first initial transmit bias control value associated with the first transmitter output level;

saving the first error value;

selecting a second transmitter output level;

selecting a second initial transmit bias control value corresponding to the second transmitter output level; and,

adding the first error value to the second initial transmit bias control value to create a second compensated initial transmit bias control value.

15. In a wireless communications device, a method for controlling transmitter output levels, the method comprising:

maintaining a table of initial transmit bias control values cross-referenced to transmitter output levels;

selecting transmitter output levels;

supplying an initial transmit bias control value from the table corresponding to a selected transmitter output level;

generating an initial transmitter output level;

measuring the transmitter output level;

creating an adjusted transmit bias control value in response to the measured transmitter output level and a reference value;

using the difference between the initial transmit bias control value and the corresponding adjusted transmit bias control value to create an error value;

saving the error value; and,

adding the error value to a subsequent initial transmit bias control value.

16. In a wireless communications device, a method for controlling transmitter output levels, the method comprising

selecting a transmitter output level;

supplying a corresponding initial transmit bias control value;

generating an initial transmitter output level;

determining an error in a transmit bias control value; and,

using the error to compensate a subsequent initial transmit bias control value.

17. In a wireless communications device, a system for controlling transmitter output levels, the system comprising:

a transmitter having an input accepting a transmit bias control value and an output supplying a transmitter output level responsive to the transmit bias control value; and,

a gain control circuit for determining transmit bias control value errors and using the errors to supply subsequent initial transmit bias control values with compensation.

18. The system of claim 17 wherein the gain control circuit has an input for selecting transmitter output levels; and,

wherein the gain control circuit output supplies an initial transmit bias control value corresponding to a selected power transmitter output level.

19. The system of claim 18 wherein the gain control circuit includes:

a measuring circuit having an input accepting the transmitter output level and an output supplying a transmitter output measurement;

wherein the gain control circuit supplies adjusted transmit bias control values responsive to the transmitter output measurement and to a reference; and,

wherein the transmitter generates selected transmitter output levels in response to the adjusted transmit bias control values.

20. The system of claim 19 wherein the gain control circuit further includes:

a table of initial transmit bias control values cross-referenced to transmitter output levels, the table having an input to accept transmitter output level selections and an output supplying initial transmit bias control values in response to the transmitter output level selections; and,

a compensator having an input to accept the adjusted transmit bias control value, an input to accept the initial transmit bias control value, and an output to supply the initial transmit bias control value compensated for error.

21. The system of claim 20 the system further comprising:

a thermometer having an output supplying temperature data; and,

wherein the table has an input to accept the temperature data, the table having initial transmit bias control values cross-referenced to temperature.

22. The system of claim 20 wherein the table includes initial transmit bias control values cross-referenced to transmitter output frequency and the table having an input for accepting transmitter output frequency selections.

23. The system of claim 20 in which the wireless communications device operates in an analog mode; and,

wherein the table accepts transmitter output level selections in accordance with advanced mobile phone service (AMPS) specifications.

24. The system of claim 23 wherein the transmitter generates the selected transmitter output level within 20 milliseconds.

25. The system of claim 20 wherein the measuring circuit accepts the transmitter output level as a voltage and supplies the transmitter output measurement as a binary number.

26. The system of claim 25 wherein the table includes initial transmit bias control values stored as binary numbers.

27. The system of claim 26 wherein the gain control circuit further includes:

a calculator having an input accepting the output of the measuring circuit, an input accepting the output of the compensator, an input accepting the reference, and an output to supply the adjusted transmit bias control value as a binary number;

a converter with an input connected to the output of the calculator and an output supplying a control voltage; and,

wherein the transmitter input accepts the converter output as a biasing signal.

28. The method of claim 27 wherein the compensator includes:

an error circuit having an input connected to the calculator output, an input accepting initial transmit bias control values from the table, and an output supplying an error value associated with the initial transmit bias control value;

a memory circuit having an input accepting the error value; and,

a summing circuit having an input accepting the stored error value from the memory circuit, an input accepting a subsequent initial transmit bias control value from the table, and an output to supply the subsequent initial transmit bias control value compensated for error.

29. In a wireless communications device, a system for controlling transmitter output levels, the system comprising:

a transmitter having an input accepting a transmit bias control value and an output supplying a transmitter output level responsive to the transmit bias control value;

a table of initial transmit bias control values cross-referenced to transmitter output levels, the table having an input to accept transmitter output level selections and an output supplying initial transmit bias control values in response to the transmitter output level selections;

a measuring circuit having an input accepting the transmitter output level and supplying a transmitter output measurement;

a calculator having an input accepting the output of the measuring circuit, an input accepting a compensated initial transmit bias control value, an input accepting a reference, and an output to supply an adjusted transmit bias control value; and,

a compensator including:

an error circuit having an input connected to the calculator output, an input accepting initial transmit bias control values from the table, and an output supplying an error value in the initial transmit bias control value;

a memory circuit having an input accepting the error value; and,

a summing circuit having an input accepting the stored error value from the memory circuit, an input accepting a subsequent initial transmit bias control value from the table, and an output connected to an

input of the calculator to supply the subsequent initial transmit bias control value compensated for error.